

REQUEST FOR RECONSIDERATION

Applicants thank Examiner Bissett for the helpful and courteous discussion of May 5, 2004. During the discussion, Applicants' U.S. representative presented arguments that the claimed plastic molding contains fibers having a length of greater than 1 mm. Such long fiber lengths impart desirable properties to the physical characteristics and surface characteristics of extruded films. Applicants' representatives further pointed out that a process where fibers are processed into a plastic in a single stage may provide a plastic molding having fibers greater than 1 mm in length.

Applicants have claimed a back molded or cast molded plastic molding. During back molding a film of a thermoplastic material is inserted into a mold and a second thermoplastic material (i.e. the fiber reinforced plastic) is molded onto the film. The film (i.e., the backmolding film) does not contain fiber reinforcement and is usually thinner than the portion of the plastic molding that is made from the fiber reinforced plastic.

The presence of the first thermoplastic film as an exterior layer of the resulting molded part allows the part to exhibit improved surface characteristics. Such surface characteristics may enable the part to have better surface finish. In the automobile industry the surface finish is preferably "class A." The plastic moldings of the invention are able to provide improved surface finish (e.g., class A) because the outer surface of the molding helps to minimize the surface irregularities that may otherwise be due to the fiber reinforcement of the fiber reinforced plastic used to form the bulk of the part.

Therefore, the claimed moldings are able to provide the benefits imparted by fiber reinforced plastics, such as impact resistance, while at the same time providing the good surface characteristics needed for class A exterior finishes in automotive applications.

The Office rejected the claims as anticipated by a patent to Grefenstein (CA 2,221,266). On page 4 and paragraph 11 of the Office Action, the Office provides as a basis

for the rejection “BASF teaches...carbon and glass fibers...having lengths of 1-10  $\mu\text{m}$ .”

Applicants note that the plastic molding of the present claims requires the presence of at least some fibers having a length of greater than 1 mm. Fibers having a length of from 1 to 10  $\mu\text{m}$  do not anticipate fibers having a length of greater than 1 mm.

Applicants submit the disclosure relied upon by the Examiner to reject the claims of the present application in view of the Grefenstein patent does not anticipate the presently claimed invention. Applicants submit the rejection is therefore not sustainable and should be withdrawn.

The Office further rejected the claims as obvious in view of Grefenstein combined with Rohrmann (U.S. 5,539,040).

Applicants traverse the rejection in view of the unexecuted copy of a Declaration under 37 C.F.R. § 1.132 submitted concurrently herewith. The Declaration shows that plastic compositions having fibers with a length of greater than 1 mm have a higher resistance to minor losses. The Declaration demonstrates that the minor losses in the claimed plastic moldings are significantly improved with respect to moldings wherein the fibers may not have a length of greater than 1 mm. As shown in the Table ? when a deck lid is manufactured with short fibers and long glass fibers respectively, the minor “loss limit” speed for the plastic molding of the invention is shown to be greater. To demonstrate the improved physical characteristics of the claimed plastic molding in comparison to plastic moldings prepared from short fibers, the Declarant has included a photograph of the damage imparted to a deck lid subjected to a fracture test. As is readily evident from the photograph, the damage to the long-fiber reinforced deck lid (i.e., the plastic molding adhering the claim limitations) is significantly less than the damage imparted to a short-fiber reinforced deck lid.

Applicants submit that one way to ensure that at least a portion of the fiber material present in the plastic molding has a fiber length of greater than 1 mm is to directly compound

(e.g., extrude) the plastic material in a single stage during processing to form a fiber reinforced plastic. It is possible that direct addition of the fiber material to the molten plastic during extrusion minimizes the damage and breakage which may otherwise occur to fibers and thereby result in their shortening or comminution. New dependent Claims 33-34 and 41-42 limit the claimed plastic moldings to those moldings obtained by processes which are carried out in a single stage or wherein the fiber material is added to the plastic material during the process.

Applicants submit the amendment to the claims places all now-pending claims in condition for allowance. Applicants respectfully request the withdrawal of the rejection and the passage of all now-pending claims to Issue.

Respectfully submitted,

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BASF



Crash behaviour of back-molded ABS (15% glass fiber)



Short fiber reinforced



long fiber reinforced  
(according to patent  
invention)

23 °C ; Speed 56 mm / s